

IOWA

Emerald Ash Borer

READINESS PLAN

[Updated: January 2, 2013]



Participating Agencies:

Iowa Department of Agriculture and Land Stewardship – State Entomologist

Iowa Department of Natural Resources – Forestry Bureau

Iowa State University Extension

United States Department of Agriculture – Plant Protection Quarantine

United States Department of Agriculture – Forest Service

Iowa Emerald Ash Borer Readiness Plan

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Iowa Emerald Ash Borer Readiness Plan

Introduction

The emerald ash borer (EAB) is a new, significant threat to the urban and rural forests of Iowa. First identified 2002 in southeastern Michigan, this exotic beetle has destroyed millions of ash trees in Michigan, Ohio, Indiana, and Ontario, Canada. The discovery of EAB in several eastern and Midwestern areas of the United States is an indication of the ease of man-assisted movement of this pest. The ongoing, multiyear effort at one nursery site in Maryland is a good example of how difficult this pest is to eradicate. Federal quarantines are in place for the entire states of IL, IN, OH, PA, VA and WV, and for portions of CT, IA, KS, KY, MD, MI, MN, MO, NY, TN, and WI, to limit unlawful spread of EAB to other states. Additionally, state regulatory agencies have established intrastate quarantines where EAB has been found.

EAB was initially found in northeastern Iowa in 2010. The infestation consisted of a single tree growing on Henderson Island in the Mississippi River. In response, the State Entomologist quarantined Allamakee County; PPQ matched this quarantine. Surveillance efforts in 2010 and 2011 did not find additional EAB infestations. However, in 2012 two USDA purple traps (New Albin and Lansing) had single adult captures, and two sentinel trees (Black Hawk Point and Pool Slough) were infested with EAB larvae. Although each of the 2012 sites was in Allamakee County, the positive finds showed this destructive pest on land miles away from the Mississippi River.

Details on the identification, biology, hosts and symptoms of the EAB are provided in a Pest Alert by the United States Department of Agriculture Forest Service (*Appendix A* or http://www.na.fs.fed.us/spfo/pubs/pest_al/eab/eab.pdf). Although chemical and biological controls are under investigation, aggressive containment efforts are necessary for new outbreaks outside the core infestations.

It is estimated by the Iowa Department of Natural Resources - Forestry Bureau that approximately 15-20% of public trees in Iowa cities are green ash. In some communities, ash comprises more than 60% of the public trees. Statewide, there are over 50 million ash trees (green, white and black) in bottomland and upland forests (2005 USDA Forest Service, Forest Inventory Data) and another 30 million urban ash trees (Iowa Department of Natural Resources – Forestry Bureau).

Iowa agencies continue to monitor the state for new EAB locations in various ways. Nursery inspectors from the Iowa Department of Agriculture and Land Stewardship – State Entomologist's Office include the EAB in their certified nursery stock grower and dealer inspections. Iowa Department of Natural Resources – Forestry Bureau has placed trap trees in high risk public and private camping areas, as well as in state parks and forests in from 2004 through 2012 growing seasons. Iowa DNR also conducts visual surveys of selected, stressed ash trees across the state and is

conducting tree inventories in several Iowa communities. The United States Department of Agriculture, Plant Protection Quarantine places the purple sticky triangular traps in coordination with the federal trapping plan and at high-risk sites. These sticky traps are baited with Manuka oil (or similar) and are placed in the ash canopy whenever possible.

Now that EAB has been found in Iowa, the goal of this Readiness Plan is to minimize the spread of EAB in Iowa through science-based proactive actions including survey, work with wood industries, public outreach, and response to public inquiries/ possible sighting.

I. GENERAL READINESS:

The objective of this plan is to reduce risk, minimize impact, and respond more effectively to a possible infestation of the EAB and to partner towards overall health and sustainability of the forests, both urban and rural, throughout Iowa.

A. Establish an executive council from a network of agencies and organizations that may be affected by EAB. This council will be made up of a *Technical Team* for prompt evaluation and action, and a *Communications Team* for providing uniform and accurate information and education. Use the existing network of the Iowa Forest Insect & Disease Management Council to draft a readiness plan, as well as to advise, advocate and lead in the implementation of the plan.

The following agencies have, by law, been assigned the responsibility of managing an exotic pest infestation and have been granted the legal authority to act by the federal, state, or local government.

- Iowa Department of Agriculture and Land Stewardship (IDALS) [code of Iowa, chapter 177A and IAC chapter 46]
- Iowa Department of Natural Resources (IDNR) – Forestry Bureau [code of Iowa, Title 10 and chapter 456A.24]
- USDA Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ)
- Affected local government(s) at site(s) of infestation

1. *Technical Team* – Lead in monitoring, confirmation, quarantine establishment, and containment efforts to limit EAB infestations.

- **IDALS – State Entomologist Office** [Co-Lead Organization]
- **IDNR – Forestry Bureau** [Co-Lead Organization]
- Iowa State University Extension and Outreach (ISUEO)
- USDA APHIS PPQ (PPQ)
- USDA Forest Service (FS)
- Iowa Emergency Management Division
- Local Government

2. *Communication Team* – Lead in communicating accurate information, quickly and broadly in a manner that supports the *Technical Team* to prevent and contain EAB infestations.

- **Iowa State University Extension and Outreach** [Lead Organization]
- IDALS – State Entomologist's Office & IDALS Communication Officer
- IDNR – Forestry Bureau
- USDA APHIS PPQ
- USDA FS
- Iowa State University
- Iowa Arborist Association (IAA)
- Iowa Nurseryman and Landscape Association (INLA)

- Iowa Association of County Conservation Boards (IACCB)
- Iowa League of Cities (ILC)
- Governor's Representative, State of Iowa
- Iowa State Association of Counties (ISAC)
- Iowa Society of American Foresters (SAF)
- Iowa Environmental Council (IEC)
- Meskwaki Natural Resources
- Trees Forever

B. Administrative Readiness – to assure that current, relevant, and achievable policies are in place that allow the actions described in this plan to occur quickly and unencumbered [*Technical Team*, except as noted].

1. Revise EAB Readiness Plan.

- a) Revise as needed and distribute revisions to readiness team
- b) Readiness Team members to distribute condensed plan to constituencies
- c) Foster cooperation among agencies for implementation

2. Identify resources and needs.

- a) Evaluate staffing needs in regulatory agencies
- b) Establish and refine EAB detection program of sentinel trees
- c) Establish and refine EAB detection program of panel traps
- d) Monitor nursery field operations
- e) Investigate and eliminate out of state ash firewood movement into Iowa
- f) Seek federal and state resources of funding for readiness activities
- g) Assess human and technical resources (e.g. tree climbers)

3. Take proactive steps to speed administrative processes.

- a) Analyze *IDALS* & *IDNR* procedures to identify streamlining opportunities
- b) Encourage local community tree inventories to determine the number and location of ash trees. Encourage communities to remove declining ash trees.
- c) Communicate EAB status to Iowa Homeland Security and Emergency Management
- d) Encourage communities to examine local administrative processes for streamlining opportunities

4. Educate the media to assure accuracy of information [*Communications Team*].

- a) Coordinate Public Information Officers from communications team
- b) Identify key sources of current information
- c) Develop/distribute current EAB information to primary public and private campgrounds and roadside rest areas

5. Determine locations of infested tree dump sites and explore wood waste utilization opportunities with *IDNR Waste Management Bureau* to reclaim ash material to its highest possible use should a volume of infested ash wood suddenly become available.

C. Technical Readiness – to assure that policy decisions, actions, and education initiatives are guided by the best and most current science [*Technical Team*].

1. Review and distribute scientific guidelines for decision making.
 - USDA FS or USDA PPQ publications on EAB
 - Michigan State University, Purdue University, Ohio State University or other university control recommendations (preventive and remedial chemical tools; biological control tools)
2. When issued, operate under New Pest Response Guidelines (*Appendix C*) or other relevant *USDA* technical guidelines.
3. Advocate for continued research for greater understanding of EAB and management options.
4. Participate in regional forest pest meetings.
5. Transfer technology to field foresters, arborists, landscape architects, and nursery professionals as it becomes available.
6. Capture and management of global information system data for surveillance activities.

II. REDUCE RISK OF INFESTATION:

The objective of this phase of the readiness plan is to assure that all means of EAB introduction are known and contained, as soon as possible.

A. Assess Risk – Determine the size and scope of the ash resources within Iowa forests and urban areas and determine the severity of new and existing EAB infestations [*Technical Team*].

1. Identify possible sources of EAB importation (i.e., ash logs, firewood, and nursery stock) coming into Iowa through public awareness and enforcement of federal quarantine on ash articles from infested states.
2. Assess the scope of the resource at risk (number of ash trees) in urban areas through expanded community tree inventories of cities near major interstate and other transportation routes.
3. Analyze density of ash populations using USDA FS forest inventory data to determine high risk ash forested areas.
4. Track spread of current EAB discoveries in neighboring states and distribute to *Communications Team*.

B. Reduce Risk [*Communications Team*, except as noted]

1. Raise public awareness on risk from firewood importation.
 - a) Install educational posters at federal, state, county and large private campgrounds and highway rest areas along interstate and other major highways
 - b) Utilize media sources (billboards, hunting magazines, etc.) to encourage visitors to leave their firewood at home
 - c) Promote “EAB-free” firewood from reputable firewood dealers
 - d) Encourage local firewood concessionaires near or in public and private park camping areas
 - e) Include statement about EAB in campsite registration (paper and on on-line)
2. Convene a Firewood Committee to analyze the firewood market and find ways to reduce the risk of importation with representatives from: [*Technical Team*]
 - IDNR
 - USDA PPQ
 - IDALS
 - IAA
 - IACCB
 - Iowa Woodland Owners Association
 - Iowa Department of Economic Development – Tourism

3. Educate industries about risk of ash importation.
 - a) Reach out to wood products manufacturers through *IDNR's* licensed timber buyers and the *Iowa Woodland Owners Association*
 - b) Educate contractors and municipalities about the importance of knowing the source of ash trees and assure they are *IDALS* inspected
 - c) Educate garden centers to no longer offer ash trees for sale
 - d) Educate firewood dealers about EAB risk
 - e) Reach out to trucking associations to help track movement of ash
4. Assure full and thorough analysis of ash nursery stock movement and effective inspection of current ash stock [*Technical Team*].
 - a) Advocate for strong state support of nursery inspection program
 - b) Track nursery stock importation in recent past
 - c) Review trace-back program for nursery shipping records from infested states
 - d) Strengthen and maintain the *INLA* voluntary ash moratorium
 - e) Advocate for increased production in state of non-ash nursery stock
5. Assure planting selections contribute to a diverse and sustainable urban forest.
 - a) Educate municipalities and large property managers about diversity in planting
 - b) Assist local governments in tree assessments and inventories to analyze diversity and guide planting decisions
6. Seek legislative support to reduce risk [*Technical Team*].
 - a. To expand EAB detection efforts
 - b. Assure Iowa's control efforts are well supported
 - c. Advocate for readiness funding from stakeholders (e.g., ISAC, IEC, ILC)
 - d. Advise federal and state elected officials of the hardship of the current limited federal and state funding to minimize EAB impacts
7. Investigate the development and implementation of using zip codes of out-of-state outdoor sports participants and campers to trace infested materials movement into federal, state, and private campgrounds [*Technical Team*].

III. ONGOING MONITORING PROGRAM:

The objective of this phase of the readiness plan is to minimize the spread and improve odds of containing an EAB infestation

A. Expand surveys of urban forest and campground ash populations along interstate and other major highways to find or rule out the presence of EAB following *USDA FS-Forest Health Protection and USDA PPQ* survey protocols [*Technical Team*, except as noted].

1. Expand federal and state detection surveys.
2. Convene *Technical Team* to survey and monitor ash populations to determine the presence of the EAB including representatives from:
 - IDALS
 - IDNR
 - ISUEO
 - USDA PPQ
 - US FS
 - IACCB
 - Iowa arboreta (e.g. Arie den Boer, Bickelhaupt, Brenton, Cedar Valley, Crapo Park, Dubuque, Iowa, Van der Veer)
 - Iowa Parks & Recreation Association
3. Enable municipal and commercial green industry professionals to participate in monitoring and reporting.
4. Communicate survey results to stakeholders and the media, including an informational Web site [*Communications Team*].

B. Educate the public and professionals to provide stakeholders with current and accurate information in a targeted manner to aid in rapid identification of symptoms of an infestation [*Communications Team*, except as noted].

1. Offer training and outreach based on current information to landscapers, arborists, Master Gardeners, nurserymen, appropriate municipal workers, and other green industry workers to assess ash health and accurately identify EAB.
2. Educate the general public about EAB.
 - a) Secure/develop simple educational materials for the general public
 - b) Pursue opportunities for speaking, educating, and exhibiting educational displays including EAB identification material
 - c) Broadly distribute public education materials

3. Recruit and enable volunteer scouting [*Technical Team*].

- a) Promote awareness through the media with regular press releases and public appeals for help in scouting
- b) Prepare kits to support volunteer scouting by both individuals and groups (e.g. ISUEO Master Gardeners, Master Woodland Managers, and Community Tree Stewards)

C. Coordinate state and national information to address professional and public inquiries from Iowa and foster cooperation and communication [*Communications Team*, except as noted].

- 1. All Team members are requested to link to <http://www.emeraldashborer.info/> , USFS, PPQ, ISUEO, IDNR, and IDALS Web sites.
- 2. Coordinate with <http://www.emeraldashborer.info/> to add Iowa information.
- 3. Support full staffing of regulatory agencies so that vital information about Iowa forest health is readily available [*Technical Team*].

D. Guide public and professional (arborist, entomologist, pathologist, plant health care specialist) inquiries and possible sightings through the following process for the most effective use of resources and quickest response [*Technical Team*].

- 1. Requests for diagnosis from a citizen or professional received by a Technical Team member will be handled by that Technical Team member as follows:
 - a. Ascertain that request is coming from Iowa. If not, re-direct caller to their state service providers.
 - b. Ask questions to eliminate EAB diagnosis as listed in the Sample Submission for Suspected EAB (Appendix F) and EAB Diagnostic Aid (Appendix G).
 - c. If potential diagnosis of EAB cannot be dismissed via the initial contact, request that digital photos of suspected insect specimens or infested trees be emailed to the ISU Plant and Insect Diagnostic Clinic (PIDC) (pidc@iastate.edu).
 - d. If digital images cannot be sent, request that suspect insect specimens be preserved (i.e., hand sanitizer) and mailed to the PIDC (327 Bessey Hall, Iowa State University, Ames, IA 50011-1020).
- 2. Digital images and specimens received and diagnosed by the PIDC as 'suspected EAB' will be shared with the State Entomologist and USDA-APHIS-PPQ. Data will be logged by PIDC.
- 3. For previously uninfested counties: If images and specimens remain 'suspect EAB', additional information will be gathered via a site visit by one or more members of the Technical Team. Tree(s) will be retained for possible dissection by a dendrochronologist.

4. At the decision of the State Entomologist, collected information and specimens from an uninfested county will be sent to a PPQ Identifier.
5. For already infested counties, images and suspect specimens may be identified by the PIDC and data entered to clarify new locations within the county, without consulting the PPQ Identifier.
6. All *Technical Team* Members are notified that a suspect EAB is in the system for identification. **However, at this point, all information is NOT for public dissemination.**
7. The result from the PPQ Identifier, either positive or negative for EAB, is received by PPQ-Des Moines and the State Entomologist, who will notify the *Technical and Communications Teams*. **A joint news release will be issued for new county infestations.**

IV. DEALING WITH AN IOWA INFESTATION

When EAB is found in Iowa, the *Technical Team*, in cooperation with the affected local government(s), will shift efforts toward containing and managing this pest in the infested area(s):

A. The *Technical Team* [except where noted] will plan and implement the following actions.

1. Begin response with affected county and city government(s).
 - a) Meet to discuss and determine the preliminary plan of action
 - b) Schedule an emergency meeting with cooperators (e.g. regulated industries, local government, recreational areas, and Tribal representatives)
 - c) Release verified, accurate information to the press [*Communications Team*]
2. Organize, initiate and conduct a delimiting survey using the national EAB Program Manual [Appendix C] to determine the outer boundary of the infestation.
3. *IDALS* places into effect an EAB State Interior Quarantine regulating all potential host material (ash wood and ash wood products) within the quarantined area as determined by the delimiting survey. The minimal quarantined area will be at the township level. This would include the “declaration of all plants and part thereof infested with the EAB as a nuisance in the State of Iowa” as well as the establishment of a formal quarantine of the infested area(s).
 - a) A federal quarantine regulating interstate movement will be initiated by *PPQ* following state quarantine guidelines
 - b) Release accurate information to the press [*Communications Team*]
4. Regulatory and control activities will be initiated as necessary.
 - a) Administer provisional quarantine established by *IDALS* consistent with Code of Iowa, Chapter 177A. Emergency rules will be issued.
 - b) Removal and disposal of all public and private ash trees as determined to be feasible.
 - c) Develop and adopt compliance agreement(s) with stakeholders in cooperation of quarantines (see *Appendix D*)
 - d) Establish sentinel trees and/or sticky traps along delimitation boundaries

B. Communicate and coordinate actions, information and response [*Communications Team*, except where noted].

1. Provide accurate information and updates to the media.
2. Provide accurate information to affected residents.
 - a) Prepare information for customizing and distributing to affected area immediately after infestation is found

- b) Cooperate with local governments to host local resident / land owner meetings to share information as soon as possible after finding an infestation [*Technical Team*].
3. Communicate with public and industry professionals to foster cooperation to maximize effective response.
4. Communicate containment success stories.
- C. Dispose of wood debris in cooperation with *IDNR Waste Management Bureau* and local governments [*Technical Team*].
- a) Establish processing facilities in the quarantine zones to efficiently handle ash debris and reclaim useable products as best as possible
 - b) Market reclaimed wood products
- D. Develop and investigate the implementation of a reforestation program authorized under applicable federal, state and local authorities using available resources [*Technical Team*].

V. IN THE EVENT THAT THE EAB CANNOT BE CONTAINED IN IOWA:

The *Technical Team* [except as noted] will pursue the following items if the EAB population cannot be contained, with cooperation from affected local government(s):

A. Response for woodlands and forests

1. Develop and distribute [*Communications Team*] silvicultural guidelines.
2. Local market utilization will be examined and encouraged.
3. Quarantine and compliance agreements will be developed and maintained to restrict movement from EAB infested area(s).

B. Response to cities and local governments

1. Municipalities will review their ordinances and appropriate recommendations made.
2. Local response plans will be developed in cooperation with local officials.
3. Training programs will be offered to local governmental staff [*Communications Team*].

C. Response for residential concerns [*Communications Team*]

1. Develop and distribute factual information (print media, Web, public service announcements, etc.) for homeowners.
2. Conduct annual training for arborists, landscape professionals, and other green industry personnel to keep this service-related business sector informed of effective containment / management efforts for EAB.

D. Seek legislative support to cover costs associated with EAB

1. Active participation from Governor's Representative.
2. Advocate for matching funds at state and federal levels to assist local government(s) in cleanup efforts.
3. Advocate for readiness funding from stakeholders (e.g., ISAC, IEC, ILC, Trees Forever).

Appendix A:

USDA Forest Service Pest Alert: Emerald Ash Borer

[\[http://www.na.fs.fed.us/spfo/pubs/pest_al/eab/eab.pdf\]](http://www.na.fs.fed.us/spfo/pubs/pest_al/eab/eab.pdf)

Appendix B:

Iowa Forest Health Advisory Council

- Iowa Arborists Association
- Iowa Association of County Conservation Boards
- Iowa Department of Agriculture and Land Stewardship – State Entomologist's Office
- Iowa Department of Natural Resources – Forestry Bureau
- Iowa Horticulture Society
- Iowa Nursery & Landscape Association
- Iowa State University, Departments of Entomology, Horticulture, Natural Resources Ecology and Management, and Plant Pathology
- Iowa State University Extension and Outreach
- United States Army Corps of Engineers
- United States Department of Agriculture – Animal Plant Health Inspection Service – Plant Protection and Quarantine
- United States Department of Agriculture – Forest Service
- United States Department of Agriculture – Natural Resources Conservation Service

Appendix C:
Emerald Ash Borer Program Manual
Emerald Ash Borer, *Agrilus planipennis* (Fairmaire)
Version 1.2, April 2011

[http://www.aphis.usda.gov/import_export/plants/manuals/domestic/downloads/
emerald_ash_borer_manual.pdf](http://www.aphis.usda.gov/import_export/plants/manuals/domestic/downloads/emerald_ash_borer_manual.pdf)

Appendix D:

USDA APHIS PPQ Compliance Agreement: Emerald Ash Borer

PPQ Form 519 – EAB Compliance Agreement Form

Addendum to PPQ Form 519 – Treatment Options

http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/regulatory.shtml

Appendix E:
Protocol for Processing Suspected Emerald Ash Borer Specimens

Protocol for Processing Suspected EAB Specimens

1. Requests for diagnosis from a citizen or professional received by a Technical Team member will be handled by that Technical Team member as follows:
 - a. Ascertain that request is coming from Iowa. If not, re-direct caller to their state service providers.
 - b. Ask questions to eliminate EAB diagnosis as listed in the Sample Submission for Suspected EAB (Appendix F) and EAB Diagnostic Aid (Appendix G).
 - c. If potential diagnosis of EAB cannot be dismissed via the initial contact, request that digital photos of suspected insect specimens or infested trees be emailed to the ISU Plant and Insect Diagnostic Clinic (PIDC) (pidc@iastate.edu).
 - d. If digital images cannot be sent, request that suspect insect specimens be preserved (i.e., hand sanitizer) and mailed to the PIDC (327 Bessey Hall, Iowa State University, Ames, IA 50011-1020).
2. Digital images and specimens received and diagnosed by the PIDC as 'suspected EAB' will be shared with the State Entomologist and USDA-APHIS-PPQ. Data will be logged by PIDC.
3. For previously uninfested counties: If images and specimens remain 'suspect EAB', additional information will be gathered via a site visit by one or more members of the Technical Team. Tree(s) will be retained for possible dissection by a dendrochronologist.
4. At the decision of the State Entomologist, collected information and specimens from an uninfested county will be sent to a PPQ Identifier.
5. For already infested counties, images and suspect specimens may be identified by the PIDC and data entered to clarify new locations within the county, without consulting the PPQ Identifier.
6. All *Technical Team* Members are notified that a suspect EAB is in the system for identification. **However, at this point, all information is NOT for public dissemination.**
6. The result from the PPQ Identifier, either positive or negative for EAB, is received by PPQ-Des Moines and the State Entomologist, who will notify the *Technical and Communications Teams*. **A joint news release will be issued for new county infestations.**

Appendix F:
Sample Submission for Suspected Emerald Ash Borer

Submitting a Potential Emerald Ash Borer Sample

1. Complete the form on the reverse side to the best of your ability. Give complete information pertinent to the sample, including background information.
2. Send as many insect specimens as possible.
3. Place insect specimen in glass vial containing the alcohol-gel sanitizer. Gently push the specimen down into the gel with a pencil. Tightly close the vial with the screw cap.
4. If sending multiple site samples, fill out the submission form for each sample and put specimens from different sites in different vials. Label vials accordingly.
5. Place the vial in bubble wrap, packing foam, or shredded paper to cushion during shipment.
6. If sending damaged wood, you will need to send as much of the material as possible.
7. Ship in crush-proof container immediately soon after collecting. Send to:

**PLANT & INSECT DIAGNOSTIC CLINIC
327 Bessey Hall, Iowa State University
Ames, IA 50011- 1020**

Sample Submission Form for Suspected Emerald Ash Borer

Client Name: _____

Submitter Name: _____

Client Address: _____

Submitter Address: _____

Client County: _____

Submitter Affiliation: _____

Client Daytime Phone: _____

Submitter Daytime Phone: _____

Client Email Address: _____

Submitter Email Address: _____

Date Collected: _____

Collection Location Details: _____

Number of Ash Trees Affected: _____

Type of Ash Tree: _____

Emerald Ash Borer Symptoms Present:

_____ **Epicormic sprouting**

_____ **Crown dieback**

_____ **S-shaped larval tunnels**

_____ **D-shaped exit holes**

For Office Use:

Date Received: _____ **Tentative Identification by:** _____

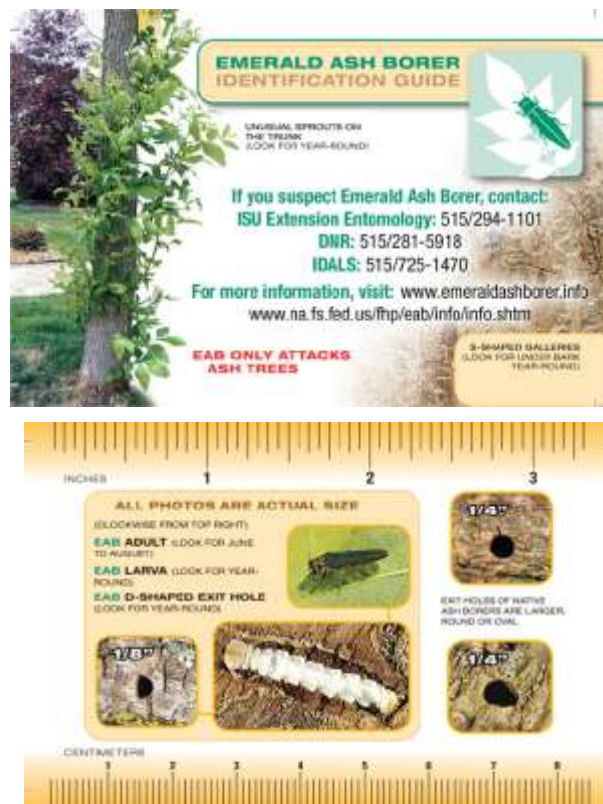
Appendix G:
Emerald Ash Borer Diagnostic Aids

Emerald Ash Borer Diagnostic Aid

By Mark Shour & Donald Lewis, ISU Extension & Outreach

If your ash tree is dying or showing signs of stress, please answer carefully the following questions. If you answer “yes” to one or more of the following questions, you ***might*** be dealing with EAB; please contact IDALS, ISU Extension or DNR as indicated below.

- Does the ash tree have a thinning crown? Are branches dying at the top?
- Are there numerous ‘water’ sprouts on the trunk below the dead branches?
- Have you noticed lots of woodpecker activity on the tree trunk?
- Do the ash leaflets have portions that have been eaten along the edge?
- Do you find winding/ S-shaped tunnels underneath the bark?
- Do you find ⅛ inch “D-shaped” holes in the bark?
- Have you found bright metallic green beetles ½ inch long on the tree?



Emerald Ash Borer credit card-sized pamphlet created by the USDA – Forest Service

THIS IS A WORKING / DYNAMIC DOCUMENT. SEND COMMENTS TO mshour@iastate.edu

EAB Beetle Identification Diagnostic Aid

By Donald Lewis, Laura Jesse, Mark Shour
Iowa State University Extension & Outreach

| Identification Criteria | Specific to Emerald Ash Borer |
|--|--|
| Specimen length | 10 to 13 mm (3/8 to 5/8 inch) |
| Color of top of specimen | Metallic emerald green; thorax with brassy or coppery reflections; elytra slightly darker green |
| Color of underside of specimen | Coppery-gold |
| Visibility of wings (intact specimen) | No, wings completely covered by elytra. If wings visible, specimen is a fly, wasp, or bee |
| Notches (indentations) between thorax and abdomen | Shape of body without noticeable indentations. Ground beetles and tiger beetles have deep indentations at this site. |
| Thorax width compared to wing cover width (wider than narrow, same width, or narrower than wide) | EAB thorax and wing cover width the same. Tiger beetle thorax is narrower than wing covers. |
| Overall specimen shape | EAB is elongated, smooth along sides, and tapered toward tail end. If tail end is rounded or blunt, specimen is likely to be a ground beetle, tiger beetle, or Japanese beetle. |